

What is claimed is:

1. An apparatus, comprising:

- 5 a) a frame;
- b) a member movable relative to said frame;
- c) damping means including a volume of a field controllable medium, the field controllable damper interconnected between the frame and the movable member;
- 10 d) a controller for activating said field controllable damper to generate a damping condition at a predetermined member operating condition; and
- e) means for activating said damping means at a predetermined operating condition of the moving member during a loss of power to the apparatus.

15 2. The apparatus as claimed in claim 1 wherein the device is a washing machine.

20 3. The apparatus as claimed in claim 2 wherein the device is a front loading washing machine.

4. The apparatus as claimed in claim 2 wherein the device is a top loading washing machine.

25 5. The apparatus as claimed in claim 1 wherein the device is a centrifuge.

6. The apparatus as claimed in claim 1 wherein the field controllable medium is a magnetorheological medium.

30 7. The apparatus as claimed in claim 6 wherein the magnetorheological medium is a magnetorheological fluid.

8. The apparatus as claimed in claim 6 wherein the magnetorheological medium is a magnetorheological powder

9. The apparatus as claimed in claim 1 wherein the damping means is a piston-type damper.
- 5 10. The apparatus as claimed in claim 1 wherein said means for activating said damping means during a loss of power to the apparatus is comprised of a secondary controller and a storage device, said secondary controller being in signal receiving relation with the storage device.
- 10 11. The apparatus as claimed in claim 10 wherein said storage device is comprised of at least one battery.
- 15 12. The apparatus as claimed in claim 10 wherein the storage device is comprised of at least one capacitor.
13. The apparatus as claimed in claim 1 wherein said means for activating said damping means during a loss of power to the apparatus is comprised of a secondary controller and a means for generating a signal for activating the secondary controller and damping means, said secondary controller being in signal receiving relation with the signal generating means and being in signal transmitting relation with the damping means.
- 20 14. The apparatus as claimed in claim 13 wherein the signal generating means is a storage device.
- 25 15. The apparatus as claimed in claim 14 wherein the storage device is a battery.
16. The apparatus as claimed in claim 14 wherein the storage device is a capacitor.
- 30 17. The apparatus as claimed in claim 13 wherein the signal generating device is a generator.
18. The apparatus as claimed in claim 13 wherein the signal generating device is a DC motor.
- 35 19. The apparatus as claimed in claim 13 wherein the signal generating device is

comprised of a magnet mounted on the damper and a coil proximate the coil.

20. An apparatus, comprising:

- 5 a) a frame;
- b) a member movable relative to said frame;
- c) damping means including a volume of a field controllable medium, the field controllable damper interconnected between the frame and the movable member;
- d) a controller for activating said field controllable damper to generate a damping condition at a predetermined member operating condition; and
- 10 e) a means for limiting vibration in said apparatus during a loss of power to the apparatus.

21. The apparatus as claimed in claim 20 wherein the means for limiting vibration is comprised of a brake.

22. The apparatus as claimed in claim 21 wherein the brake is further comprised of first and second spaced apart members, the second member being movable relative to the first member; a contact member made integral with the second member, said contact member having a contact end proximate the movable member; biasing means for increasing the distance between the members; and means for limiting the relative displacement between said members, said means for limiting the relative member displacement being activated when power is supplied to the apparatus and being deactivated when the power to the apparatus is lost.

25 23. The apparatus as claimed in claim 22 wherein the biasing means is a spring.

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24. The apparatus as claimed in claim 22 wherein the means for limiting the relative displacement of the plates is a solenoid, said solenoid being in signal receiving relation with said controller.

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25. The apparatus as claimed in claim 20 wherein said means for limiting vibration is comprised of a secondary controller in signal receiving relation with a storage device, said secondary controller being in signal transmitting relation with said damping means.

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26. The apparatus as claimed in claim 20 wherein said means for limiting vibration is comprised of a secondary controller in signal receiving relation with a DC motor, said secondary controller being in signal transmitting relation with said damping means.

27. The apparatus as claimed in claim 20 wherein said means for limiting vibration is comprised of a secondary controller in signal receiving relation with a generator, said secondary controller being in signal transmitting relation with said damping means.

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28. The apparatus as claimed in claim 25 wherein the storage means is a battery.

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29. In an apparatus comprising a frame; a movable member; a damping device including a volume of a field controllable medium, the field controllable damper interconnected between the frame and the movable member; a controller for activating said field controllable damper to generate a damping condition at a predetermined member operating condition; and means for activating the damping device at a predetermined operating condition of the moving member, the method comprising the steps of upon loss of power to the apparatus, supplying an activating signal to the means for activating the damping device and as required supplying activating signals to the damping device to change the rheology of the field controllable medium in the damping device.

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30. The method of claim 29 further comprising the additional step of sending a signal from the controller to the damper activating means at predetermined intervals.
- 5 31. In an apparatus comprising a frame; a movable member; a damping device interconnected between the frame and the movable member where said damping device is activated in response to a signal; a controller for supplying said signal to activate said damper to generate a damping condition at a predetermined member operating condition; and means for activating the damping device at a predetermined operating condition of the moving member, the method comprising the steps of upon loss of power to the apparatus, supplying an activating signal to the means for activating the damping device and as required supplying activating signals to the damping device to provide the required damping to the apparatus.
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32. The method as claimed in claim 31 wherein the damper comprises a field controllable damper comprising a volume of field controllable material, the method comprising the further step of changing the rheology of the field controllable medium in the damping device when the signal is sent to the damping device.
33. An apparatus, comprising:
- 25 a) a frame;
- b) a member movable relative to said frame;
- c) damping means interconnected between the frame and the movable member, said damping means for supplying damping in response to an actuating signal;
- d) a controller for actuating said damper to generate a damping condition at a predetermined member operating condition; and

- e) means for limiting vibration in said apparatus during a loss of power to the apparatus.
34. The apparatus as claimed in claim 33 wherein the damping means is a field controllable damper, said damping means comprising a volume of a field controllable medium.
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35. The apparatus as claimed in claim 34 wherein the field controllable medium is magnetorheological fluid.